· ENGINEERING NEWS-RECORD ·

A WEEKLY JOURNAL OF CIVIL ENGINEERING AND CONSTRUCTION

Volume 121

JULY—DECEMBER, 1938

McGRAW-HILL PUBLISHING COMPANY, INC.
330 *WEST 42D STREET, NEW YORK CITY*

Copyright 1939 by the
McGraw-Hill Publishing Co., Inc.
New York, N. Y.

INDEX

• ENGINEERING NEWS-RECORD •

VOLUME 121...*JULY—DECEMBER*, 1938

July 7 ..... 1– 34
July 14 ..... 35– 64
July 21 ..... 65– 94
July 28 95–124
Aug. 4 125–158
Aug. 11 159–186
Aug. 18 187–216
Aug. 25 217–246
Sept. 1 247–280
Sept. 8 281–310
Sept. 15 311–340
Sept. 22 341–384
Sept. 29 385–416
Oct. 6 417–446
Oct. 13 447–476
Oct. 20 477–506
Oct. 27 507–538
Nov. 3 539–568
Nov. 10 569–598
Nov. 17 599–628
Nov. 24 629–684
Dec. 1 685–714
Dec. 8 715–744
Dec. 15 745–772
Dec. 22 773–802
Dec. 29 803–830

A

ACOUSTICS
Fastening acoustical blocks. R. C. Brinker *157
New field e256
Soundproof studios for the movies. C. P. Hubert *211
Aerial tramways see Cables

AERONAUTICS
Airports:
Conference of Mayors urges federal aid for airports n543
Federal aid to continue n219
North Beach airport roof truss blown over n602
Washington, D. C. airport under way n541, e548
Washington airport funds approved n687
Hangar:
High wind blows down brick wall n631
Air conditioning:
Water requirements for air conditioning (N.E.W.W.A.) 410
American Association of State Highway Officials:
Dallas meeting n749
American Automobile Assn. convention n633, e635
American Institute of Steel Construction:
Convention at French Lick Springs, Ind. n482
Three new advisers appointed n344
American Public Health Assn.:
Organized n599
American Public Works Assn.:
New York meeting n449, 501
American Railway Bridge & Building Assn.:
Chicago meeting 622
American Society for Testing Materials:
Atlantic City convention n6
Report of Atlantic City meeting 60
American Society of Civil Engineers:
District convention n248
Honorary members named n540
New York Metropolitan Section meeting n511
Rochester meeting n480, 527
Salt Lake City convention n*98, 153, e134
American Society of Mechanical Engineers:
Officers cleared in damage suit n804
American Society of Photogrammetry:
New York meeting n316

AQUEDUCTS
Colorado River:
Construction contracts and personnel of contractors' organizations 668
Construction program and management. J. L. Burkholder *659
Construction schedules on major aqueduct features 667
Design of the aqueduct. D. B. Gumensky *653
Distribution systems. R. B. Diemer *680
Location problems. Julian Hinds *646
Los Angeles urgently needs more water. F. E. Weymouth *639
Operating problems. L. V. Branch *677
Project to bring water to Los Angeles *637, e634
Pumping plant design. J. M. Gaylor *673
Rig for delivering steel rings *743
San Jacinto tunnel driving. B. C. Leadbetter *669
San Jacinto tunnel east section holed through n*125
San Jacinto tunnel holed through n*252, n*629
Unit costs, averaged, for principal features of main aqueduct 667
Water softening consultants named n574
Water to be softened n545
Delaware River aqueduct:
Bids received on bypass tunnel n130
Dravo Corp. is low bidder n717
Tunnel construction (unit prices) ..... Aug. 18 adv. 16
Associated General Contractors:
Excelsior Springs, Mo. meeting n630
New heads of association n*688
Association of Western State Engineers:
Phoenix, Ariz. meeting n777
Austin Co. organizes British firm n220

AWARDS
Barnes, Frank, honored by Belgian king n*806
Bartlett award presented to F. R. White n*749
Belgian prize for highway engineering given to Rader n219
Medal established for building inventions n602
Stevens receives Hoover medal n*778

B

Balcom, Homer G., structural engineer, dies n7
Blasting:
Electrical detonators adopted by WPA ..... Dec. 22 adv. n16
Gas cartridges aid Conchas Dam excavation. Allyn Harris ..... l 808
Bonds:
Grand River Dam surety bond is largest issued in U. S. n38
Ogden, Utah, power bonds voted down n191

BOOK REVIEWS
Air conditioning. C. A. Fuller 829
Air conditioning. Moyer & Fitz 829
Airplane structures. Niles & Newell 624
Asphalts and allied substances. Herbert Abraham 534
Business administration for engineers. Harding & Canfield July 28 '38 122
Changing the skyline. Paul Starrett Aug. 25, '38 243
Dams and control works 412
Elements of structural engineering. E. S. Sheiry 412
Elements of water supply engineering. E. L. Waterman 624
Estimates and costs of construction. F. W. Stubbs 412
From plan to reality 534
History of transportation in Canada. G. P. de T. Glazebrook 828
Housing comes of age. Strau & Wegg 243
Housing year book, 1938 412
Manual of waterworks accounting 828
Master builders of sixty centuries. J. A. Miller 243
Master plan. E. M. Bassett 244
Measuring municipal activities. Ridley & Simon 534
Men and iron. Edward Hungerford 122
Men of mathematics. E. T. Bell 624
Minimum sanitary requirements for swimming pools and bathing places 534
New England hurricane 828
Park and recreation structures 624
Soil mechanics applied to highway engineering in Ohio. Woods & Litehiser 244
Street cleaning practice 413
Structural design. C. T. Bishop 412
Surveying. Breed & Hosmer 534
Timber, its structure and properties. H. E. Desch 412
Transportation on the Western front. A. M. Henniker 828
Urban blight and slums. M. L. Walker 243
Water supply and sewerage. E. W. Steele 122
Welding handbook 828
Wood preservation. Hunt & Garratt 122
Welding of steel structures 535
Breakwaters see Shore protection
Bricks and brickwork:
Test of filler-to-brick bond. H. Z. Schofield *92

BRIDGE ACCIDENTS AND FAILURES
Belgian bridge failure surveyed. O. Bondy *204, e194
Bixby Bridge collapses under semi-trailer truck n776
Montana opposes bridge insurance n191
Montana railway bridge burned n101
Quebec:
Wooden bridge burns n5

BRIDGE CONSTRUCTION
Bending knee reinforcing. W. C. Goodwin *246
Cofferdam of lumber made cheaply for small bridge. W. B. Kane *94
Curb form for bridge. B. F. Perry *712
Raising bridge spans. R. H. Wood *246

BRIDGE DESIGN
A.I.S.C. prize bridges *12
Bearing rollers for bridges 703
Curbs and rails or bridges. S. B. Slack *498, e484
Expansion bearings. H. M. Hadley ..... l 575
Expansion bearings for bridges. L. R. Schureman ..... l 453
Expansion joints. B. J. Garnett ..... l 693
Hurricane bridge designed for Galveston, Tex. *327, e318
Lift bridge mechanisms and controls. Becker, Benson & Wickerham *618
Bridge floors:
Cincinnati viaduct deck constructed with welded expansion joint. T. P. Young *156
Thousand Is. bridge paving *279
Bridge maintenance:
Oregon helps maintain highways by frequent bridge inspections. E. G. Ricketts *51

BRIDGES
Alabama highway bridge (unit prices) ..... Dec. 22 adv. 12
Albemarle Sound, N. C.:
Dedication of bridge n250
Alpena, Mich.:
Bascule bridge (unit prices) 802
Arkansas highway bridges (unit prices) ..... July 21
Arkansas highway department not to compete with toll bridge n283
Belgian bridge failure surveyed. O. Bondy *204, e194
Binghamton, N. Y.:
Centering hung from pier umbrellas. A. B. Cohen *145
Trestle grade crossing. A. B. Cohen *399
Bluewater bridge:
Michigan-Ontario bridge is of cantilever design *234
Michigan-Ontario bridge opens n449
Cairo, Ill.:
Bridge dedicated n570
Calvin Coolidge Memorial bridge in construction n*451
Cape Cod Canal bridges:
Resurfacing bridge roadways (unit prices) ..... Aug. 11 adv. 18
Carquinez bridge:
Owner must refund tolls n418
Chicago:
Lift bridge mechanisms and controls. Becker, Benson & Wickerham *618
Cincinnati, Ohio:
Viaduct deck constructed with welded expansion joint. T. P. Young *156
Deer Isle-Sedgwick bridge:
Bridge approaches (unit prices) ..... Oct. 13 adv. 26
Deer Isle, Me.:
Sheetpiling cofferdams cut to fit bedrock *207, e194
Delaware highway bridge (unit prices) ..... Sept. 8 adv. 38
Ethiopia:
New highway bridge n*284
Fosters Crossing, Ohio:
Little Miami River viaduct constructed of timber arches. W. W. Carlton *112
Little Miami River viaduct over railroad corrects road alignment *110

• Illustrated; a, abstracts; e, editorials; l, letter; n, news

Galveston, Tex.:
New highway bridge built from barges.*329
New bridge designed for hurricanes.. *327, e318
Georgia highway bridge (unit prices).. Aug. 25 adv. 18, Sept. 8 adv. 38
Glendale, Calif.:
Deflections and steel stresses measured under load of 430 tons.....*615
Grand Is. bridges, N. Y.:
Bridge work (unit prices)..... Aug. 25 adv. 20
Greenville, Miss. bridge to be constructed n451
Idaho:
Highway bridges (unit prices)..... Nov. 17 adv. 20
Indiana highway bridges (unit prices).. July 14 adv. 26
Iowa highway bridges (unit prices).... Aug. 25 adv. 20
Los Angeles:
Viaducts for Arroyo Seco parkway.... *79
Macdonald Creek, Washington State Construction (unit prices).....538
Maryland bascule highway bridge (unit prices) .....Dec. 22 adv. 12
Merritt Parkway, Conn.:
Changes in bridge design. L. G. Sumner .....l 165
Middletown, Conn.:
Balanced cantilever erection of twin tied arches. L. F. Kirkley.....*236
Bridge opened n163
Medal struck for opening.....n*222
Montana:
Continuous girder bridges for highways have advantages. V. P. Maun.*186
New Brunswick, N. J.:
Pennsylvania R. R. replaces bridges under busy tracks.....*137
New Mexico highway bridge (unit prices).....July 29 adv. 12
New York City:
Elevated highway bridge at Canal St.n*447
George Washington bridge roadway contract let n574
George Washington bridge to have new approach n*776
Queensboro bridge concrete pavement laid n776
Niagara bridge:
Bill for bridge withdrawn in Canada n8
Bridge site may be sold.....n250
New bridge to replace the one destroyed.....Dec. 1 adv. n25
Two firms share work.....n715
Ogden, Utah:
Suspension bridge for water pipe. Robert Sailer *75
Oregon curved bridge.....n*342
Paintersville, Calif.:
Precast concrete slabs replace plans on highway bridge *121
Pennsylvania bridge improvements (unit prices).....Aug. 25 adv. 18
Pontchartrain, La.:
Toll bridge made free.....n806
Portsmouth, N. H.-Kittery, Me. bridge:
PWA grant approved.....n448
Puget Sound, Wash.:
Suspension bridge bids asked.....n220
Washington State Toll bridge consultants engaged n129
Red River bridge, Okla.:
I-beam bridge (unit prices)..... Sept. 15 adv. 16
Rhode Island highway bridge (unit prices).....Sept. 22 adv. 32b
Rockport, Ky.:
Green River bridge (unit prices)..... 802
St. Charles, Mo.:
Floor replaced while traffic detours on rolling overpass bridge. N. R. Sack *536
San Francisco-Golden Gate:
Plate posts improve the restaurant view *278
Seattle:
Pontoon bids received again.....n806
Pontoon bridge approved by experts.. n38
Pontoon bridge bids called.....n570
Pontoon bridge bids rejected.....n720
Pontoon bridge gets grant.....n507
Tacoma:
Gehring Rd. concrete bridge for low cost. E. A. White.....*265
Narrows bridge (unit prices)..... Nov. 24 adv. 20
Narrows bids postponed.....n282
Narrows bridge contract awarded.....n685
Narrows bridge loan approved..... n419, Oct. 13 adv. n29
Texas overpass (unit prices)..... Oct. 13 adv. 24
Thousand Is.:
Bridge being built.....*44
Concrete paving *279
Dedication of bridge.....n*217
Five bridges in one.....*231
Vancouver:
Lions' Gate bridge completed.....n*570
Webber Creek, Calif.:
Adjustable abutments used.....*586
Westfield, Mass.:
Great River bridge (unit prices)..... 772
Building accidents and failures:
Charleston engineer condemns buildings after tornadoes n447
Washington, D. C. two buildings fail..n222

BUILDING CONSTRUCTION

British building sets an example in industry cooperation. E. J. Mehren.... 274, e257
How to build leaky brick walls with good materials. A. B. MacMillan.... 707
Laying out cheek cuts on cripple rafters. D. Griffiths *279
Missouri Building Commission to disband n418
New York Building Congress names committee to study work relief.....n510
New York City finds structural welding advances under the code..... 325
Paris building combines old and new methods. R. W. Abbett..... *24
Pennsylvania plans building of school..n312
San Francisco Chamber of Commerce promotes building n689
"Strap and pin" timber framing joint for San Francisco Fair structures. J. J. Gould *151, e134
Timber splice design. J. C. Schulze....*216

BUILDING DESIGN

Areas of parabolic segments. L. J. Sack *216
Hurricane resistance e695
Plywood developments. N. S. Perkins..l 808
Plywood for gusset plates—correction. F. J. Hanrahan.....l 133
Plywood stresses—correction. H. A. Williams .....l 164
Soundproof studios for the movies. C. P. Hubert *211
To find the radius of an arch. L. J. Addicott.....l, Oct. 20 adv. 21
To find the radius of an arch.....*310

BUILDING LAWS AND REGULATIONS

Mexican building reduced by proposed tenant law n602
New York rent control law upheld.....n687
New York State prior-lien for repairs voided by court.....Dec. 22 adv. n14
Trailer camps to be charged with violation of building code.....n600
Building moving:
Hartford, Conn. store skewed in moving *86

BUILDINGS

Bellingham, Wash.:
School wall crack control by dummy joints. A. M. Young.....*178
Boston:
City hall grant by PWA dropped because of delays.....n158
Clairton, Pa.:
Irvin works—water, sewerage, power and transportation facilities.....*783
Culver City, Calif.:
Soundproof studios for the movies. C. P. Hubert *211
East St. Louis, Ill.:
Highway headquarters *226
Florida Keys:
Hurricane shelters *734
Great Britain:
Factory with pressed steel sheet framing n*187
Hartford, Conn.:
Store skewed in moving..... *86
Hawaii:
Fastening acoustical blocks. R. C. Brinker *157
Illinois:
Thirteen armory buildings. S. E. Berkenblit *706
Lexington, Ky.:
Educational building (unit prices)... Nov. 24 adv. 20
London, England:
Sawtooth roof, welded framing for factory *77
Los Angeles:
Postoffice and courthouse concrete pumped 220 ft. high.....788
Union Terminal *550
Milwaukee:
Schools in public parks as an experiment.....Nov. 17 adv. n22
Mount Palomar, Calif.:
Construction of observatory and mounting for telescope.....*517, e514
New York City:
Apartment house excavation reveals old tunnel vaults. V. R. Bergman.*267
Hunter College loan from PWA refused by city n158
Rockefeller—13th building started....n449
Rockefeller Center—Sidewalk Superintendents Club n*600
World's Fair:
Perisphere and trylon construction for the N. Y. World's Fair. Hussey & McKeen.....*586
World's Fair exhibit buildings design. R. H. Shreve.....*369
Newark, N. J.:
Fast work on reinforced concrete apartments. J. Di Stasio.....*759
Olympia, Wash.:
Contractor for college asks damages for defective plans.....n602
State buildings required to meet master plan n251
Painesville, Ohio:
Windowless factory n*630
Paris:
Faculty of Medicine building methods combine old and new. R. W. Abbett *24
Pittsburgh:
Hospital bids refused payment by PWA n344
San Francisco, Calif.:
"Strap and pin" timber framing joint for Fair structures. J. J. Gould.. *151, e134
Syracuse, N. Y.:
Windowless factory started.....n*541
Washington, D. C.:
National Art Gallery foundation.....n *35
White Salmon, Wash.:
Gymnasium of plywood. E. H. Horn.. *551, e548
Whitehill, Pa.:
School bids rejected.....n343

C

CABLES

Aerial tramways. G. M. Kilcar..... l 41
Cannon Mt. tramway..... *12
Canadian Institute on Sewage and Sanitation:
Toronto meeting n540
Caissons:
Galveston hurricane bridge construction.*329

CANALS

All-American Canal:
Canal work (unit prices)..Sept. 8 adv. 36
Equipment for processing fill material. C. H. Kadie.....*487
Tailored sheepsfoot rollers. C. H. Kadie Jr.....*786, e780
Chesapeake & Ohio canal:
U. S. buys canal.....n Oct. 13 adv. 29
Coachella canal, Calif. (unit prices).... July 21, adv. 18
Contra Costa canal:
Bids received n450
First section completed.....n*157
Third section advertised.Sept. 15 adv. 20
Galveston-Brozoria Intracoastal Canal:
Dredging canal (unit prices)..... Nov. 24 adv. 22
Lehigh Valley canal given back to original owners n452
New York State barge canal work (unit prices) 505
Panama Canal:
Enlargement study n745
Study to be made of means to increase capacity n451

CEMENT

A.S.T.M. reports on developments in cement 61
Central Valley cement bids received...n 6
Federal cement purchasing plan dropped n418
Florida cement tax to go to high court. Oct. 6 adv. n32
International cement meet in Stockholm. Sept. 15 adv. n20
Low heat cement. C. L. Kirk.....l 751
Low-heat cement research. Meissner & Moran 589
Quick-setting grout. V. L. Minear.... Dec. 29 adv. 18
Quick-setting grout. Rudolph Cook....l 575
Wages rates set for cement plants.....n247

CITIES

A.P.W.A. discusses municipal problems. 501
Corpus Christi's growth brings problems to the city engineer. W. W. DeBerard.*142
How cities are being improved. E. J. Cleary *395
Seattle council rejects engineer reorganization n161
Seattle engineer forces to be reorganized n70
City manager:
Number of cities under council manager rule 206
City management:
San Francisco's successful financial management 124

COFFERDAMS

Chanoine wickets used for cofferdams on Peoria Dam *104
Cutting bridge cofferdam piles at river-bed level *770
Lumber cofferdam made cheaply for small bridge. W. B. Kane..... *94
Sheetpiling cofferdams cut to fit bedrock as bases for Deer Isle bridge *207, e194

CONCRETE

A.S.T.M. reports on developments in concrete 61
Bartlett Dam concrete handling..... *13
Bending knee reinforcing. W. C. Goodwin *245
Cambridge conference discussed timber and concrete strength..... 115
Chart for bending trussed reinforcing bars. William Sell.....*414
Chart for mix design. George Wiley... 157
Combining sized course aggregates to secure workable concrete. C. A. G. Weymouth *818
Crack control in concrete walls of school. A. M. Young.....*178, e167
Everday concrete, e 43, C. L. Kirk, l 223, L. J. Mensch, R. F. Mirick l 133, H. H. Morgan l 164, A. B. Wang....l 255
Fast work on reinforced concrete apartments. J. DiStasio.....*759
Form spacer *32
Forms:
Adjustable bridge curb form. B. F. Perry *712
Kingsley Dam precast concrete riprap for slope protection. D. A. Buzzell.. *54
Los Angeles postoffice concrete pumped 220 ft. high..... 788
Measuring concrete vibrations *141
Ore processed gravel for concrete at Marshall Ford Dam.....*699

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

Paint saves concrete handrails on Oregon bridges 567
Pump placement of concrete in subzero weather. F. A. Dale.....*407
Roughener for concrete.....*742
Sand moisture test. S. S. Green..... 414
Saw for cutting concrete in laboratory. C. E. Wuerpel.....*120
Simplified practice for concrete blocks revised 106
Stair joint construction..... 278
Test cylinders used for walks and walls. *33
Vibration, long continued, reduces strength. W. B. Ivie.....l 255
Conduits:
Toledo's supply conduit strengthened by iron inner tube. R. L. Price.....*495

CONSTRUCTION:

Chamber of Commerce and Construction League discuss prospects of industry.n512
Essential data e287
1937 construction e515
Public relations with reference to the construction industry...Facing page 446
Test for industry.....e485

CONSTRUCTION EQUIPMENT:

Concrete mixing plant has ore classifiers, rod mills and scrubbers.....*699
Crawler tractor dragline to clear ditches *33
Railroad use of construction equipment. 622
Rig for delivering steel rings.....*743
Scrapers mix borrowpit materials..... *90
Sheepsfoot rollers. C. H. Kadie Jr. *876, e780
Snow plow. Helge Sandberg.....*763
Stone pickers and pit sprinkling system for processing fill material. C. H. Kadie *487
Test drill rig. W. W. Linthacum.....*712
Tractor becomes mobile derrick.....*415
Tractor and crane. G. R. Huffman..... l 41

CONSTRUCTION MATERIALS:

A.S.T.M. reports on developments in engineering materials 60
Fence manufacturers told to stop price-fixing n253
Florida materials dealers told to end monopoly n343
Glass monopoly charged in St. Louis.... n97
Materials and labor prices, July 7 adv. 12, Aug. 14 adv. 16, Sept. 1 adv. 20, Oct. 5 adv. 23a, Nov. 3 adv. 20, Dec. 1 adv. 16
Milwaukee building supply dealers charged with monopoly.Nov. 3 adv. 28
Rail steel prices drop.....n388
Soot removed from limestone by prespraying 92
Standard group studies building materials n807
Tile manufacturers accused of price discrimination n253
Torsional strength e42
Wood used extensively at San Francisco Fair *467

CONTRACTORS:

Act just passed by Congress aids contractors on former federal work. J. W. Gaskins..... 56
Bids:
Arithmetical error does not void bid. 55
Detroit bidding through association ended n221
Discrimination against outsiders illegal at Tacoma n192
Improper bidding methods charged in Detroit n125
Los Angeles water board asked to call for bids n545
Danbury paving suit.....n452
Federal contractors held exempt from licensing n417
Kansas contractor denied pay for extra rock n70
Montreal contractor seeks damages for ground condition n252
New York City electrical contractors charged with fraud.....n389
New York lathing contractors indicted.n543
Osceola, Iowa, contractor loses damage suit for reservoir dam. H. H. Sears.. 124
Relation between the engineer and the contractor e635
Strauss, Joseph, engineer for Golden Gate bridge held to have status of contractor n507
Wage law covers some contractors.....n715
Washington State College contractor asks damages for defective plans....n602
Contracts:
Changed conditions under contracts. King & Shields.....561, e549
Cornell College of Engineering to expand.n632
Corrosion:
Bituminous enamel bond strength for pipe coatings. O. G. Goldman.....*339
Crozier, Bernard L. city engineer, dies...n100
Culverts:
Hexagonal timber culvert at Boca Dam. 504
Righting a tipped culvert in Connecticut. A. R. Collier.....*533

D

DAMS

Algeria:
Rockfill dam substructures. Giovanni Rodio .....l 721
Alum Fork Dam:
Leakage stoped with grout wall.....*289
Anaconda reservoir dam fails.....n126
Bartlett Dam:
Arches at dam.....n*542
Multiple arch dam for Salt River irrigation project in Arizona..... *13
Beavers used on streams for reclamation work 152
Boca Dam:
Hexagonal timber culvert for construction road 504
Bonneville Dam:
First power sold.....n127
Boulder Dam:
Architecture of the dam..... 277
Colorado River States plan dam power revenues n804
Sixth generator installed.Dec. 1 adv. n25
Visitors during construction. W. E. Warne .....l 391
Buchanan Dam:
Flood reduced a foot by dam.....n187
Hearings concluded n388
Investigation starts n126
Bureau of Reclamation builds sixteen dams n746
Caleb Mills Saville Dam.....n719
California check dam with fence-wire apron *415
Chickamauga Dam:
Cofferdams nearly completed.....n*774
Conchas Dam:
Gas cartridges aid excavation. Allyn Harris 808
Headworks (unit prices).Oct. 27 adv. 18
Connecticut Dams fail, two.....n101
Failure of Killingworth Dam washes out road n*129
To be inventoried.....n482
Deer Creek Dam:
Tunnel for river.....Dec. 8 adv. n14
Earth dams discussed at A.S.C.E. meeting 529
El Azucar Dam:
Rolled-fill dam in construction.*227, e224
Fort Peck Dam:
Allotment of additional funds.....n508
Dredging reduced n*603
Hydraulic fill nearing completion...n *38
Planning installation of power units.n130
Slide of fill.....n*385, e392, n*508
Slide studied by experts.....n452
Slide and soil experts. R. F. Legget..l 605
Work resumed n417
Fort Supply Dam:
Bids received for construction.....n313
France:
Model of dam to be constructed.....*486
Grand Coulee Dam:
Bulkheads n*543
Concrete placed from high trestle.... 185
Contractors must pay gas tax on trucks n452
Generators to be biggest in the world.n281
Heating equipment may be installed so as to continue work.....n776
Reservoir tunnel to be finished at once .....n Oct. 13 adv. 28
Steel gates close gaps in dam.....*733
Three turbines put under contract....n690
Trestle to help with concreting.....n*539
Welding on penstocks..... 177
Grand River Dam: See Pensacola Dam
Green Mountain Dam:
Contract let n*632
Greybull Valley project, Wyo.:
Construction of dam and reservoir (unit prices).....Sept. 15 adv. 16
Guntersville Dam:
Lock near completion....Dec. 8 adv. n16
Hansen Dam, Calif.:
Bids opened n191
Earthfill dam construction (unit prices) .....Sept. 15 adv. 16
Head Gate Rock Dam, Ariz.:
Earthfill dam (unit prices)..... Aug. 18 adv. 18
Hiwassee Dam:
Concreting begins n*65
Imperial Dam:
Desilting works and dam.....*736
Kingsley Dam:
Dam (unit prices).....July 21 adv. 24
FPC approves dam.....Sept. 22 adv. n36
Precast concrete riprap for slope protection. D. A. Buzzell..... *54
Mahoning Dam:
Bids for construction called.....n685
Marshall Ford Dam:
Design of dam. K. B. Keener.....*697
Ore processed gravel for concrete....*699
Mississippi River:
Dam No. 2 tested for soil load on buried plates. W. Z. Lidicker..... *82
Mississippi River dam No. 12:
Esplanade works, Iowa (unit prices). Sept. 29 adv. 16
Mormon Flat Dam:
Spillway *74
Morris Dam:
Tested by artificial earthquakes.....*184
Muskingum Watershed Conservancy District 14 dams completed..... n5
Ohio rolled earth dam (unit prices).... 416
Osceola, Iowa:
Contractor loses damage suit against city. H. H. Sears..... 124
Parker Dam:
Placed in operation.....n*40
Reservoir filled for tests.Dec. 1 adv. n23
Spillway n*247
Pensacola Dam, Okla.:
Surety bond issued..... n38
(Unit prices) .....July 14 adv. 24
Peoria Dam:
Chanoine wickets used for cofferdams.*104
Prado Dam:
Bids on dam.....n342
Earth dam (unit prices).Oct. 13 adv. 24
Pratt Fork Creek, Ohio:
Rains carry out dam..... ...n341
Roza Dam:
Contract for construction let.....n282
Ruby Dam:
Cofferdams under construction.....n*507
Salt River Dam:
Spillway capacities increased...*174, e166
Seminoe Dam:
Concreting near completion.....*516
Shasta Dam:
Bids advertised for generators.....n303
Bridge rises n*573
Bypass tunnel n*282
Contract for construction let..... n1
Contractors ordered to start.....n311
Crowe is superintendent..... n97
Rail relocation bids asked.....n248
Sheetsfoot rollers. C. H. Kadie Jr..... *786, e780
Warehouse for storage yard (unit prices) .....July 14 adv. 36
Six Mile Creek Dam:
Decanting muddy lake water. M. K. Millard 310
Sluiceways closed under head. A. B. MacMillan *19
Solon Dam:
Pump placement of concrete in subzero weather. F. A. Dale..*407, e392
Tom Miller Dam (Austin):
Identical cement bids received twice.n283
Unity Dam:
Carrying scrapers mix borrowpit materials *90
Volga River, U.S.S.R.:
Rybinsk dam under way.....n*572
Whitney Point Dam, N. Y.:
Earth dam (unit prices)..... Aug. 11 adv. 16
Yuba Dam:
Debris dam proposed for power generation n314
Docks see Wharves and Docks
Doors:
Rigid rolling doors..... 627
Drainage:
Oxnard Drainage District, Calif. work (unit prices) 506
Treasure Island, Calif. drained of salt water and leached with fresh. C. H. Lee 462
Drawings:
Reduction of engineering plans cuts operating costs. E. L. Sanders.*825, e810
Typing on tracing cloth. H. W. Krattly 712
Dredges and dredging:
Channel dredging, Fla. (unit prices).... Dec. 29 adv. 12
Duncan, Frank K. made city engineer in Baltimore n130

E

EARTH FILL

Earthwork computation. Pearson, Barnes .....l 453
Guntersville reservoir construction stabilizes earth fills with rock. E. W. Vaughan *27
Preparation of the New York World's Fair site. C. S. Proctor.....*353
Retaining wall design charts. L. T. Waterman *336
Slide rule for yardages. F. J. Amador Jr. *742
Stone pickers and pit sprinkling system for processing fill material for canal. C. H. Kadie.....*487
True areas on a Monroe calculator. B. C. Seal.....*245
Yerba Buena island built to order for San Francisco Fair.....*459
Earth fill see also Soil Mechanics

EARTHQUAKES

Lateral resistance. Beanfield, Moorman l*165
Lateral resistance of buildings. A. Floris *59
Morris Dam tested by artificial earthquakes *184
Electric motors:
Lift bridge mechanisms and controls. Becker, Benson & Wickerham.....*618

ELECTRIC RAILWAYS

New York City:
Lets new contract for El razing.....n778
6th Ave. "L" removal granted.....n449
To tear down Sixth Avenue El..... n632, n*715
Electrical applications:
Relay for temperature-control thermometers. M. E. Prior.....*414
Vacuum tube amplifier outfit for finding leaks in water mains.....*431
Electrical transmission:
Boulder Dam third transmission line approved 173
Measuring live-wire height. E. J. Connell *92
Engineering Inst. of Canada and Association of Professional Engineers join forces n689

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

ENGINEERS

Arbiter or advocate? A. B. Morrill....l 751
Changes made among the engineers....n452
Cooper Union studies liberalized training n633
Engineering firms are not service agencies. E. S. Cullings....l 809
Engineering graduates. J. J. Moore....l 164
Engineering students. W. J. Wherry l 483, H. H. Williams....l 721
Inspection often neglected. Conrad Jones ....l 347
Licensing:
California explains licensing stand...n479
Louisiana registration law killed.... n96
Oregon will not recognize California licenses n345
Professional activities. G. E. Geyer....l 223
Professional is defined under wage-hour law n511
Professional work defined....e549
Roughing it in Paraquay.... 179
Schools lure students by false promises, says Conlon n37
Wage and hour administrator holds that engineering is not a service....n745
Engineers unions see Federation of Architects, Engineers, Chemists and Technicians
Erosion:
Wash control on cut slopes. S. J. Walsh 92
Excavation:
Preparation of the New York World's Fair site. C. S. Proctor....*353

EXPOSITIONS

New York World's Fair:
Background and objective for the Fair. W. E. Andrews....*350
Building the "Needle" and the "Apple." Hussey & McKeen....*586
Construction organization and technique. J. P. Hogan....*359
Design of buildings for the Fair R. H. Shreve *369
Foundations on deep fill. Foster & Glick *361
Landscape plan for the Fair. G. D. Clarke *367
Planning the layout of the ground. S. F. Voorhees *357
Preparation of the Fair site. C. S. Proctor *353
Roads for Fair and park. H. W. Durham *378
Transport planned for fifty million visitors. H. M. Brinckerhoff....*381
U. S. S. R. plans removable building..n690
Water, sewers and services. L. B. Roberts *375
San Francisco-Golden Gate International Exhibition:
Bridge achievements celebrated by exposition. W. P. Day....*457
Draining and leaching Treasure Island. C. H. Lee.... 462
Moving trees wholesale....*475
Octagonal tower design. J. J. Gould.*813
Planning buildings and grounds....*464
Roads and transportation....*472
"Strap and pin" timber framing joint for structures. J. J. Gould....*151
Timber used in the construction, shows new methods *467
Utility requirements met for fair service *470
Yerba Buena island built to order....*459
World's Fair effects.... e73

F

Federal Trade Commission:
California lumber dealers restrained... n97
Complaints issued against misleading ads n189
Federation of Architects, Engineers, Chemists and Techniciana:
Minnesota highway department signs with union n222
Washington convention n746
Ferries:
San Francisco-Golden Gate Ferry discontinues one ferry.... n3

FLOODS AND FLOOD PROTECTION

Arkansas Court holds telegraph company liable for flood damage....n573
Burlington, N. J. dike bursts.... n*4
California flood control not to be PWA job n99
California flood protection channel (unit prices)....Nov. 24 adv. 22
Colorado creek flood damage....n314
Colorado River of Texas in flood....n*158
East Pittsburgh flood gets design. J. E. Webster .... l 71
Flood control Act extends federal authority. R. B. Garrabrant.... 30
Flood control bill is signed.... n3
Floods on minor streams....e195
High water markers. J. C. Hoyt....l*547
Hurricane and flood devastates New England n*386, e393
Hurricane and flood in the Northeast. H. W. Richardson....*424, e422
Los Angeles district laid open to flood danger arising from forest fires....n*689
Massachusetts governor-elect attacks outlay for hurricane repair....n749
Mississippi River cutoffs lower flood crests. G. R. Clemens....*608
Missouri court denies flood damages to farmer n689
Naugatuck River dike work begun....n447
New England flood control planned....n418
New England flood control work receives allotment n447, e455
New England flood control work starts soon n572
New England flood control work to start (map) n481
New England flood dams recommended for penstocks n750
New England floods in the river valleys. W. G. Bowman....*427, e422
New York State surveys storm damage..n510
Pennsylvania fire control system to aid flood control n689
Quebec flood waters cause much damage n282
Regional flood control. Eugene Atwater ....l 483
Vermont not to oppose federal flood control n540
Water and flood control....e135
Forests and forestry:
Landscape plan for the New York World's Fair. G. D. Clarke....*367

FOUNDATIONS

Conchas Dam excavation aided by gas cartridges. Allyn Harris....l 808
Hay seals pool bottom. S. G. Thompson 742
Model of test borings. H. D. Hammond.*476
New York City apartment house excavation reveals old tunnel vaults. V. R. Bergman *267
New York World's Fair foundations built on deep fill. Foster & Glick....*361
Quicksand is gravel packed for foundation. R. F. Mirick.... 215

G

GARBAGE AND REFUSE DISPOSAL

A.P.W.A. discusses municipal problems 504
Cautions regarding land-fill disposal. H. P. Eddy, Jr.... 766
Detroit closes second incinerator....n573
Detroit stops using new incinerators....n477
Greenwich, Conn. abandons dump which leads to rat invasion....n774
Land fills: pro and con. Carey, Moses, Fisher, Vincenz l 317, Fair, Sheddan, Richards, Flockhart, Rich, Erickson..l 347
Land fill pro and con. Duncan, Wolman l Oct. 20 adv. 22, McCarthy, Busch, Hansen, Crookes l Oct. 13 adv. 32, Russell, Cleary ....l 391, e393
New York abandons plans to dump in Jamaica Bay n287
New York City dumping case dismissed. n219, e224
New York City garbage scow award held up by Dravo protest....n127
New York City landfill method of refuse disposal to be investigated....n804
New York City plans for Jamaica dumping restrained by suit....n127
New York City reclaims land by depositing refuse. E. J. Cleary....*270, e256

GATES

Closing sluiceways under head. A. B. MacMillan *19
Flood gate design. J. E. Webster.... l 71
Steel gates close gaps in Grand Coulee Dam *733

GRADE CROSSINGS:

Chicago bankrupt railways to share grade separation cost....n448
Deaths from crossing accidents decrease n250
Detour trestle at Binghamton, N. Y. A. B. Cohen....*399
Detroit underpass (unit prices).... 416
Lawrence, Kans. builds underpass with pumping system to withstand floods. LaMotte Grover *738
Nevada overpass (unit prices).... 772
New York State crossing amendment proposed to cut railroad cost.... n69
Number of crossings eliminated....n130
Seattle pedestrian overpass (unit prices) Sept. 15 adv. 16
Texas overpass (unit prices).... Oct. 13 adv. 24
Great Lakes:
Niagara Falls, Buffalo, Cleveland and Detroit new sewage plants will clean-up the Great Lakes. E. J. Cleary.*197 e194
Grouting:
Alum Fork Dam leakage stopped with grout wall *289
Quick setting grout. V. L. Minear. Dec. 29 adv. 18, Rudolph Cook....l 575

H

HIGHWAY ADMINISTRATION:

Connecticut Highway Department men receive pay increases....n449
Missouri—fee to highway engineer is held improper 87
Ohio highway department attacked by investigators, n7. Ohio not Illinois n 40 ....n196
Ohio engineer asks reinstatement....n248
Ohio engineer reinstated by court....n717
Ohio highway engineers resign....n629
Ohio mayor suspends city engineer....n778
Virginia Highway Commission may be increased n418

HIGHWAY CONSTRUCTION:

A.S.T.M. reports on developments in road materials 64
Aeration test of bituminous mixtures. R. E. Bollen *107
Baltimore-Havre de Grace dual road completed. N. L. Smith.... *45
Bituminous sealing materials tested as seal costs for roads. A. R. Legault.... *57
Chinese road is strictly handmade. Fu-Hua Chen *817
Cincinnati's new superhighway skirts the bluff for seven miles. H. H. Kranz *439
Earth roads in the South. S. C. Hill pt 1 *259, pt 2 *306, pt 3 *306, pt 4 *403, pt 5 *435, pt 6....*491
How to process soil-cement roads. Sheets & Catton.... *20
Los Angeles builds Arroyo Seco Parkway *79
Michigan road job combines prestabilized material with machine spreading *202, e194
Ohio builds a reinforced brick road....*579
Ohio constructs monolithic brick pavement. V. K. Gamble....*704, e694
Pennsylvania concrete road has new top pressed on. Gunnar Johnson....*531
Screed for place measured windrows. G. S. Covert Jr.... *33
Utica, N. Y. resurfaces streets for service. G. C. DeWitt....*401
Wisconsin uses French drains to cure frost boils *292

HIGHWAY DESIGN:

Curl in concrete pavements. C. F. Galloway *800
Indiana experiment provides extra lanes for turns with offset center curbs....*172
Northern-Wantagh Parkway extension design. S. M. Shapiro....*764, e752
Spiraling curves as an aid to safer driving 293

HIGHWAY ECONOMICS

Allotments for six months....n163
Arkansas county judges paid from road funds n542
Connecticut must pay expenses on WPA town road projects....n163
Federal funds aid secondary roads.... Dec. 15 adv. n24
Gas tax diversion control defeated in New York State.... n97
Gas tax diversion guarded against in Illinois n219
Gas tax diversion halted in three states.n631
Gas tax diversion to be studied by New York State.... n67
Gas tax diversion to be voted on in four states n542
Gas tax must be paid by Grand Coulee Dam contractors n452
Massachusetts road fund allotted to cities n251
Highway lighting:
Golden Gate approaches lighted by sodium vapor lamps....*600
Reflectors cut accidents in three-month test 150

HIGHWAY MAINTENANCE

Cost accounting plan for highway maintenance in Illinois. R. R. MacLeod *117, e102
Curve superelevation maintenance. J. C. Park 566
Flask cleaning. John Skag.... *32
Indiana checking snow-fighting equipment 438
Oregon helps maintain highways by frequent bridge inspections. E. G. Ricketts *51
Snow removal in Norway. Helge Sandberg *763
Highway marking:
Arrows embossed on highway surface..*120
Two-color traffic line for hills....*246
Highway Research Board:
Washington meeting n718

HIGHWAY SAFETY

Curbs and rails for bridges. S. B. Slack *498, e 484
Curve spirals. E. C. Myers.... l 41
Guard rail of steel trusses....*537
Right of utility companies to run pole lines along highway rights-of-way Oct. 13 adv. n30
Wire screens for scaling cliffs in Oregon. E. A. Collier....*536
Highway signs:
How to paint road signs cheaply. P. T. Martin *88
Highway traffic:
Traffic facts e435

HIGHWAYS

Aggregate spread with burlap for dust prevention *93
Alaska highways (unit prices) Aug. 18 adv. 16....Dec. 22 adv. 13
Altamont Pass highway separates traffic with central curbing....*786

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

Arkansas highways (unit prices)..... July 28 adv. 12
Arkansas road men offered training courses n452
Blue Ridge parkway unit to be opened. 446
Boston-Washington highway likely..... n67
Canada express highway prohibits commercial structures n315
Colorado equipment purchases by engineer upheld by court.....n775
Delaware dual highway (unit prices)... July 14 adv. 24
Earth road becomes prominent.....e722
Earth road costs. G. E. Martin.....1 779
Express-road experiment..... e43
Fire Island parkway opposed by Southampton n452
Fort Smith, Ark. upheld in right to build curb in middle of highway....n687
Keuka-Penn Yan road paving (unit prices) 538
Manitoba highways (unit prices)..... Sept. 22 adv. 34
Merritt Parkway-Connecticut may build gas stations n253
Mexican civil engineers form cooperative n250
Mississippi County seeks repayment for paving n282
Mississippi State is planning highway building n691
Missouri highways (unit prices)..... July 21 adv. 18
Montana Bituminous Conference discusses the low cost road..... 521
Nevada highway (unit prices)..... Sept. 22 adv. 34, 744
New Mexico highways (unit prices).... Sept. 8 adv. 36
New York Circumferential parkway begin n*745
New York City:
Bicycle paths planned for parkways.. 186
East River Drive bulkhead (unit prices) .....Aug. 11 adv. 16
East River Drive planning.....n 162
Parkway substituted for battery tunnel n 418, e422
New York World's Fair roads. H. W. Durham *378
Ohio calls for bids on first big cloverleaf n8
Ohio highway department sued by taxpayer on bituminous mix.....n345
Ohio state auditor warns contractor that hot-mix bills will not be paid..n750
Oklahoma Commission halts highway work .....Dec. 22 adv. n14
Oklahoma deficit forces halt in work..n283
Oklahoma road body resumes contract letting .....Dec. 8 adv. n16
Pan American Highway Conference delegates named n806
Pan-American Highway—costs of completion reported n544
Pavement joints *310
Right-of-way problem on express highways e286
San Francisco-Golden Gate highway to the fair *44
Saskatchewan highway work (unit prices) .....Nov. 24 adv. 20
Slope protection, Calif. (unit prices)... Oct. 13 adv. 26
South Carolina highway (unit prices).. 830
South Penn highway financing.....n452
South Penn highway contract let.....n539
South Penn Highway receives grant....n125
Table of right-of-way acreage..... 278
Tennessee concrete paving (unit prices). Aug. 25 adv. 20
Tennessee highway work (unit prices).. Dec. 15 adv. 20
Utah-construction of oiled shoulders (unit prices).....July 21 adv. 18
Utah highways (unit prices)..... Sept. 22 adv. 32b
Wantagh state parkway extension nearly completed .....Dec. 1 adv. n26
Washington State highways (unit prices) Aug. 11 adv. 18, Sept. 22 adv. 34, 505
Wyoming highway (unit prices)..... 830
Yellowstone Park roads (unit prices)... 628
Yonkers-Mount Vernon toll road planned n315
Hill, Charles S. Fifty years an editor....n*95

HOUSING

Albert Farwell Bemis Foundation formed at M.I.T. for housing study.. n1
Allocations nearly all made.....n419
American Institute of Architects submits proposed fees to U. S. H. A..... n96
Appropriations earmarked n39
Austin, Tex. project cost reaches new low n508
Baltimore experiment in protection of residential area n419
Buffalo housing contract let.....n385
Contracts let locally on jobs.....n218
Costs of housing. Riker Realty Co.....1 547
Covington project halted by injunction.n450
Dallas may destroy insanitary dwellings Dec. 8 adv. n16
Detroit project leased to local body....n190
Eighteen cities get housing money.....n313
Farm Security Administration uses standard materials 294
FHA mortgage limit up fifty per cent..n773
Great Britain builds houses for the middle classes. O. W. Roskill.....*582, e577
Great Britain plans homes for engineers n*281
Increase in housing in 1937.....n599
Jacksonville housing upheld.....n161
Loans and grants:
13 cities receive loan contracts..... n96
Local housing agency set up in 27 states 18
Los Angeles private rental housing job planned n101
Louisiana and Pennsylvania supreme courts uphold housing laws..... n69
Mortgage down payment reductions increase FHA activity.....n481
Middle-income housing discussed by President and FHA adviser.....n569
Montclair, N. J. withdraws application for project.....Dec. 1 adv. n26
New York City:
Housing architects sign with CIO.... n96
Housing program suggested by Moses n635, e694
Housing to be in slums.....n600
Lends funds to housing authority.... n69
Metropolitan Life starts Bronx project n*126
Plans two housing projects.....n686
Project planned for East Side.....n571
Red Hook construction cost low.n341, e349
Queensbridge project saves on costs..n541
Red Hook project under way..... n69
Voters approve state loans to local governments for housing.....n603
New York State-financed housing amendment adopted n218
Prefabricated buildings for farms shipped n686
South Carolina upholds housing.....n541
Strauss sees market for private housing n601
Tropical housing discussed by International Congress n316
U.S.H.A. clarifies land policy.....n507
U.S.H.A. loans money for sixteen more contracts n776
U.S.H.A. loans thirty-two million more.n571
U.S.H.A. makes allocations.....n745
Urban dwellings increase.....n190
Wages stabilized on housing jobs..... n1
Howell, C. H., flood control engineer resigns n390

HYDRAULICS

Hydraulic jump in enclosed conduits. Lane & Kindsvater.....*815
Hydraulic jump in trapezoidal channels. Posey & Hsing.....*797
St. Anthony Falls' hydraulic laboratory dedicated n686, *725
U. S. Waterways Experiment Station increases its scope. P. W. Thompson...*822
Velocity head correction. R. E. Kennedy 171

HYDRO-ELECTRIC POWER

Bonneville power plans changed by elections n749
Colorado River plant planned.....n190
Fox River, Wis. project turned down by PWA n346, e349
Holtwood proceedings n481
Holtwood proceedings started by FPC.n284
Santee-Cooper drilling begins.....n*341
Santee-Cooper project contracts with Harza Engineering n99
Wisconsin hydro program planned.....n219
Wisconsin's little TVA upheld by court n8

HYDROLOGY

Comparative river stages and discharges in New England floods. W. G. Bowman *427
Government makes studies of water needs and measures rivers. J. C. Hoyt 269
Snow surveys discussed at A.S.C.E. meeting 155
Snow survey of Lake Tahoe basin made.n126

I

Institute of Traffic Engineers meeting....n478
Instruments—prizes offered for instrument uses n250
International Housing & Town Planning Congress n316, e319
Irwin, James C., retires from Boston & Albany n*419

IRRIGATION

A.S.C.E. discusses irrigation at meeting. 155
Bartlett Dam will store floodwaters for Salt River irrigation project..... *13
Central Nebraska District allotment increased n569
Central Nebraska project approved by FTC n100
Central Nebraska Public Power and Loup River District to buy Iowa-Nebraska Light & Power.Dec. 15 adv. n22
Central Valley cement bids received.... n6
Colorado-Big Thompson:
Conservancy district to pay half on job n127
Project to be in charge of P. J. Preston n344
Grand Coulee dam-Columbia Basin project headed by Parker....Dec. 22 adv. n14
Great Plains Committee report.....e607
Greybull Valley project, Wyo. (unit prices).....Sept. 15 adv. 16
Hawaiian project can carry only half of its cost n747
Imperial Dam and desilting works.....*736
Kingsville, Tex. combines irrigation with sewage *821
Loup River District allotment reduced.n569
Modern reclamation e781
Ogden Canyon pipe siphon carried on suspension bridge. Robert Sailer.... *75
Reclamation Bureau builds sixteen dams n746
Islands:
Yerba Buena island built to order for San Francisco Fair..... .....*459

J

Johnson, F. Ellis, named dean at Wisconsin n1

L

LABOR

A.F.L. union certified on Red Hook housing project n346
British building sets an example in industry cooperation. E. J. Mehren... 274, e267
Compensation law change planned in Pennsylvania n188
Consolidated Edison held subject to NRLB n719
Construction labor discussed at A.S.C.E. meeting n511
Jurisdictional dispute is still a problem.e577
Man-hour of work costs one dollar....n686
New York City housing architects sign with CIO n96
Notes on Labor Matters.....8, 40, 70, 131, 189, 253, 285, 390, 420, 481, 511, 604, 633, 778
Pennsylvania passes stiffer compensation law n390
Pension plan started by cement company n222
Steel wage proposes under Walsh-Healey Act n573
Wage-hour Act scope.....e723
Wage-hour amendment in New York public works n157
Wage-hour bill to be administered by Andrews n65
Wage rates are set for cement plants..n247
Wages stabilized on housing jobs..... n1
Labor see also Federation of Architects, Engineers, Chemists and Technicians

Lakes:
Decanting muddy lake water at Six Mile Creek Dam. M. K. Millard..... 310
Minnesota Lake levels restored by wells 821

LAND

Clearing lands for reservoirs..... 489
Survey of land and migration problems to be made in northwestern states....n687

Landslides:
West Indian landslide.....n685

LEVEES

Arkansas levee work (unit prices)..... Aug. 18 adv. 18
Dupo, Ill. levee failure held not contractor's fault n805
Illinois levee work (unit prices)..... Aug. 11 adv. 18
Missouri levee work (unit prices)..... July 28 adv. 14
Lyse, Prof. Inge, to leave for Norway....n193

M

Markham, Maj. Gen. Edward, named to head Great Lakes Dredge.....n*249
Medal:
Oldest bridge medal?.....*559
Mississippi River:
Cutoffs and the river. D. A. Watt.... 1 809, e810
Cutoffs lower flood crests. G. R. Clemens *608
Morganza flooding to be started soon.. n68
The Moles Society formed.....n346
Montana Bituminous Road Conference... 521
Mosquitoes:
California control progress..... 756

MOTOR VEHICLES

Automobiles:
City allowed to operate auto testing station n603
Self-washing pit. W. D. M. Allen....*626
Slow motion driving unlawful in 22 states 585
Trailers:
Rules for trailer camps issued by engineers 820
Test suit against trailer camps charging violation of building code.....n600

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

Trucks:
Brake booster *537
Connecticut dump trucks not to be regulated n163
Limits on truck weights and sizes (W.A.S.H.O.) 241
Louisiana increases weight limits... n66
Mount Rushmore Memorial....n*773

N

National Assn. of Housing Officials meeting....Oct. 27 adv. n20
National Conference on Planning. G. H. Herrold 85
National Institute for Traffic Safety Training meets at University of Michigan....n190
National Reclamation Assn. meeting.....n480
National Society of Professional Engineers:
Pittsburgh meeting n509
New England Sewage Works Assn.:
Hartford meeting n449
Boston meeting n344, 409
New York World's Fair see Expositions

O

Observatory at Mount Palomar, Calif.... *517, e514
Oil consumed in the construction industry.e576

P

PARKS
Chicago Park system needs.... 741
Columbia Parkway, the new superhighway for Cincinnati. H. H. Kranz....*439
Fire Island improvement proposed by Moses ....Oct. 13 adv. n28
Fire Island parkway opposed Southampton n452
Fire Island parkway plan rejected by County supervisors n*540
Los Angeles builds Arroyo Seco Parkway *79
Parsons, Admiral, public works officer, retires....Oct. 27 adv. n20

PAVEMENTS
Ames, Iowa street surfacing (unit prices) July 28 adv. 14
Chicago keeps grout spatter off sidewalk with screen....*245
Curl in concrete pavements. C. F. Galloway *800
Fairbanks, Ala. sidewalks (unit prices) Dec. 29 adv. 12
Iowa pavement replacement (unit prices) July 14 adv. 26
Locking a manhole frame to pavement foundation *490
Milwaukee street surfacing (unit prices) July 28 adv. 12
Montreal street pavements (unit prices) Sept. 29 adv. 16
New Orleans changes paving assessment basis n69
New York World's Fair roads. H. W. Durham *378
Ohio constructs monolithic brick pavement. V. K. Gamble....*704, e694
Parking area surfacing, Calif. (unit prices) 802
Street paving price list and catalog....*617
Tyler, Tex. paving (unit prices).... Oct. 27 adv. 18
Utica, N. Y. resurfaces streets for service. G. C. DeWitt....*401
Wisconsin brick streets (unit prices).. Aug. 11 adv. 18
Philadelphia Sewage and Water Authority formed n344

PILES AND PILING
Cutting bridge cofferdam piles at river-bed level *770
Everett, Wash. timber seawall and bulkheads *108
Marking test piles. Herbert Eldridge...l 164
Mississippi Dam tested for soil settlement on ties between sheetpile walls holding earthfill. W. Z. Lidicker..... *82
Model of test borings. H. D. Hammond.*476
New York World's Fair uses spread footings or long piles depending on the character of the fill. Foster & Glick..*361
Rot in wood pile after 36 years. N. B. Garver *713

PIPES AND PIPE LINES
Bituminous enamel bond strength for pipe coatings. O. G. Goldman.....*339
Colorado River aqueduct's distribution system. R. B. Diemer....*680
Concrete pipe monopoly....n167
Exhibit of soil corrosion specimens..... 214
New York World's Fair water, sewers and services. L. B. Roberts....*375
Ogden Canyon pipe siphon carried on suspension bridge. Robert Sailer..... *75
River crossings for water pipes....*826
Sulphur pipe and linings.... 50

PLANNING
Corpus Christi's growth brings problems to the city engineer. W. W. DeBerard.*142
National Conference on Planning. G. H. Herrold 85
New York City Park Commissioner recommends industrial zoning of Jamaica Bay be eliminated.... n68
Zoning and its widespread evasion as found in Chicago.... 799

PLYWOOD
Chicago Heights sewer trenches sheeted with plywood panels. C. H. Ashdown *91
Developments in plywood. N. S. Perkins ....l 808
Plywood for gusset plates—correction. F. J. Hanrahan....l 133
School gymnasium in Washington made of plywood. E. H. Horn.....*551, e548
Stresses in plywood—correction. H. A. Williams ....l 164
Port of New York Authority:
Total operations show surplus....n805

PORTS AND HARBORS
Bayonne port terminal completed.....*768
Bayonne port terminal macadam pavement (unit prices).....Aug. 25 adv. 20
Bayonne terminal transit shed (unit prices)....July 14 adv. 24
Marquette, Mich. stone breakwater built in fast time....*789
Rimouski, Canada:
Contractor seeks damages for ground conditions n252

POWER AND POWER PLANTS
Columbus, Miss. to build municipal plant n690
Commonwealth Edison plans expansion.n687
Government and power development....e319
Iowa-Nebraska Light & Power to be bought by Central Public Power and Loup River District.....Dec. 15 adv. n22
Irvin Works, Clairton, Pa. power facilities *783
Knoxville utility to be managed by consultants n420
National Defense Power Committee announces equipment expansion.....n539
Niagara Hudson to build steam plant..n315
Power and prosperity....e753
Solar power the subject of study..... 172
Texas utilities offer to sell out property.n314
Tri-County and Loup districts to buy utilities n775
West Tennessee Power & Light's appeal for review of Jackson, Tenn. case dismissed n451

PUBLIC RELATIONS:
Public relations. O'Leary, Bent, Eigel, Higgins, Coblentz ....l 751
Public relations with reference to the construction industry.....facing page 446
Selling public works to the public. E. J. Cleary *794
Sidewalk Superintendents' Club.....e634

PUBLIC WORKS
A.P.W.A. discusses municipal problems.. 501
Disbursements lag behind allotments... n66
How cities are being improved. E. J. Cleary *395
New York City names three new officials n748
Ohio sets up state building authority... n8
San Francisco public works headed by Wilder n130
Selling public works to the public. E. J. Cleary *794
South American public works program being pushed 56

PUBLIC WORKS ADMINISTRATION
Allotments are all made....n685
Allotments nearly all gone....n542
Allotments restricted for public power.. n35
Cost of speeding plans approved..... n99
Georgia to get no more grants until constitutional provision is removed.....n687
Ickes issues warning on high prices....n717
Loans and grants:
Applications exceed funds....n417
New policy n125
Power projects to receive allotments.. n66
Quotas set for states....n217
Third of states at limit....n312
Lobbying drive by PWA.... n99
Lobbyist vs. PWA....n247
Payment refused on high unit bids for Pittsburgh Hospital n344
Riggs denies attacking general policy..n542
Riverside, Calif. penalized for hiring lobbyist n66
San Francisco PWA grants halted by Hetch Hetchy controversy.... n1

PUMPS AND PUMPING
Centrifugal pump priming. K. B. Humphrey *537
Colorado River pumping plant design. J. M. Gaylord....*673
Lawrence, Kans. builds underpass with pumping system to withstand floods. LaMotte Grover *738
Two pumps for high pressure. K. B. Humphrey 566

R

Railway accidents:
Chicago, Milwaukee, St. Paul & Pacific R. R. absolved of Montana wreck.....n222
Railway crossings see grade crossings
Railway track and trackwork:
Missouri Pacific reduces maintenance by using sub-ballast slabs for soft ground *105, e103
Pennsylvania R. R. replaces bridges under busy tracks....*137
Railway terminals:
Canadian National Ry. terminal at Montreal to be started again....n805
Los Angeles terminal secures workable concrete by combining sized course aggregates. C. A. G. Weymouth.....*181

RAILWAYS
Canadian National Ry. builds branch line....Dec. 22 adv. n14
Canadian Ry. held responsible for low bridge accident n689
Iran builds a railroad....*792
Missouri Pacific petitions for branch removal n451
Pittsburgh-Harrisburg railway permit denied n419, n544
Relocation of railroad around Shasta Dam (unit prices)....*597
Relocation of railroad, Calif. (unit prices) 830
Shasta Dam rail relocation bids asked.n248
Southern Pacific R. R. repairs flood damage n540
Real estate:
Chicago survey to be made of land use and real property inventory....n508
Milwaukee's benefit assessment law upheld by Supreme Court....Dec. 1 adv. n26
Research:
St. Anthony Falls hydraulic laboratory dedicated n686, *725
Harvard's tools for sanitary research. Fair & Moore....*297, e286

RESERVOIRS
Clearing lands for reservoirs.... 489
Corpus Christi builds a covered reservoir. C. T. Bartlett....*727
Guntersville reservoir construction stabilizes earth fills with rock. E. W. Vaughan *27
Los Angeles scatters reservoirs with chemicals *300
Milwaukee reservoir to have cover.....n541
Multiple-use reservoirs. E. H. Sargent..l 575
Multipurpose reservoirs e167
Nantes, France, three story reservoir..*230
Quabbin Reservoir:
Grant to complete reservoir....n342
Retaining walls:
Design charts for retaining walls. L. T. Waterman *336
Pressures on retaining walls and a new theory 711
Revetments:
Bank revetment, Ore. (unit prices)..... 506
Ridgway, Robert, consulting engineer, dies n*777, e781

RIVERS
Arroyo, Tex. channel improvement (unit prices)....Dec. 8 adv. 12
Cleveland to improve the Cuyahoga River channel n*448
Cuyahoga River channel to be widened..n343
Missouri River gets first cutoff. W. M. Hoge *755
Rio Grande channel improvements, Tex. (unit prices) 772
Rio Grande rectification is completed... n39, e42
Rio Grande storage. H. J. Leach.....l 779
Rio Grande River water a potential cause of trouble between Texas & Mexico. W. W. DeBerard.....*555, e548
Rivers see also Floods and flood protection, Mississippi River, St. Lawrence

ROOFS AND ROOFING
Anchorage of roofs is a "must".....e695
Corpus Christi builds a reservoir with an unusual groined arch roof. C. T. Bartlett *727
San Francisco-Golden Gate Fair uses wood for the buildings....*467
Sawtooth roof, welded framing for English factory *77

S

St. Lawrence River:
Berle urges New York to guard water power n5
San Francisco-Golden Gate Fair see Expositions

SANITATION
Harvard's tools for sanitary research. Fair & Moore....*297, e286
How cities are being improved. E. J. Cleary *395
Selling public works to the public. E. J. Cleary *794
Trailer camp rules issued by engineers.. 820

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

SEWAGE TREATMENT

Albuquerque, N. M. sewage disposal plant (unit prices) ... 628
Aurora sewage disposal plant presents problems to be solved ... *731
Chicago control lock dedicated ... n*311
Chicago sewage plant uses alloy steels *524, correction ... 513, e514
Chicago's newest treatment plant nears completion ... n*687
Cleveland sewage plant dedicated ... n*250
Corpus Christi's growth brings problems to the city engineer. W. W. DeBerard ... *142
"Currie Claraetor" at Tri-City ... *812
Dayton plant explosion ... n*599, n*688, e695, *696
Delaware River sewage code adopted by three states ... Dec. 1 adv. n25
Denver asks more money for diversion tunnel ... Oct. 27 adv. n20
Flora, Ill. uses chlorine to control bulking sludge ... 242
Greensboro, N. C. completes waste treatment plant ... *321, e318
Half the urban population of U. S. treats sewage ... n774
Hastings has sewage treatment. J. C. White ... l 223
Hyannis, Mass. sewage disposal in sandy soil. E. S. Chase ... *769
Illinois primary sludge pumping data ... 445
Irvin Works, Clairton, Pa. sewerage facilities ... *783
Kingsville, Tex. combines irrigation with sewage ... *821
London County treatment plant employs stabilization instead of complete purification ... *26
Milwaukee settles judgment with Activated Slude ... n99
Niagara Falls, Buffalo, Cleveland and Detroit new sewage plants will clean-up the Great Lakes. E. J. Cleary ... *197, e194
Niagara Falls plant drops dewatering machines ... n188
Niagara Falls plant to be investigated ... n218
Niagara sewage plant passes first trials ... n311
Notes on sewage disposal. Willem Rudolfs ... 34, 158, 280, 446, 568, 714
Pennsylvania acts against Philadelphia sewage ... n159
Philadelphia Authority to take over water and sewage system ... n774
Philadelphia forms Sewage and Water Authority ... n344
Philadelphia told to treat sewage ... n314
Rogers, Ark. must improve sewage plant operation ... n39, n188
Sheridan, Wyo. sewage system (unit prices) ... Dec. 29 adv. 12

SEWERS

Boston relief sewer (unit prices) ... 744
Buffalo sewer engineer is indicted ... n5
Catch basin grate ... *626
Chicago Heights sewer trenches sheeted with plywood panels. C. H. Ashown. *91
Duluth storm sewer (unit prices) ... July 21 adv. 18
Gravel-packed quicksand. R. F. Mirick 215
Greece, N. Y. sanitary sewers (unit prices) ... Nov. 24 adv. 20
Harrison, Ark. sewer system placed in operation ... n450
Janesville, Wis. sewer joints were caulked to cut leaks. Joseph Lustig ... *553
Laying sewer pipe in quicksand. J. E. McDonald ... l 605
Laying sewers in quicksand. R. F. Mirick ... l 779
Michigan drainage structure (unit prices) ... Dec. 15 adv. 20
Milwaukee sanitary sewer (unit prices) 628
Montreal sewer explosion ... n157
New Jersey storm sewers (unit prices). July 28 adv. 14
New York World's Fair water, sewers and services. L. Roberts ... *375
San Francisco Fair sewer towed to place and floated by paper tubes ... *567
Saugus, Mass. sewers (unit prices) ... 506
Sewer rental experience ... 702
Sewer rental for revenue ... 726
Staten Island, N. Y. sewer tunnels driven by small shields ... *149

SHORE PROTECTION

Bank protection, Augusta, Ga. (unit prices) ... Aug. 18, adv. 18
Bank work, Ore. (unit prices) ... Oct. 13 adv. 26
Bulkhead of sheet piling for Louisiana (unit prices) ... Sept. 22 adv. 34
Chicago breakwater bids called for on filter plant ... n314
Everett, Wash. timber seawall and bulkheads ... *108
Marquette, Mich. stone breakwater built in fast time ... *789
Silicosis:
Pennsylvania health department to study hazards ... n128
Slide rule for yardages. F. J. Amador, Jr. ... *742
Society for the Promotion of Engineering Education:
Middle Atlantic section meets in New York ... n748

SOIL MECHANICS

A.S.C.E. meeting shows interest in soil mechanics ... 527
All-American Canal compacts fill with tailored sheepsfoot rollers. C. H. Kadle, Jr. ... *786, e780
Chart gives soil weights. W. E. Cowan. *215
Cohesionless soils. D. M. Burmister ... l 9
Early soil surveys. E. P. Goodrich ... l Oct. 20 adv. 21
How to process soil cement roads. Sheets & Catton ... *20, e10
Lever for pulling soil sampling augurs ... *567
Mississippi River Dam No. 3 tested for soil load on buried plates. W. Z. Lidicker ... *82
New York World's Fair foundations depended on character of the fill as shown by soil tests. Foster & Glick ... *361
Soil shear-test machine. G. P. Tschebotareff ... *581
Subsoil sampler. E. C. Seibert ... *121
Treasure Island, Calif. drained of salt water and leached with fresh. C. H. Lee ... 462
Wrench for soils laboratory. E. A. Adbun-Bur ... *156
Soil Mechanics see also Earth fill
Squaring numbers. G. G. Commons ... 156
Standardization:
Standards publications are consolidated ... n600

STEEL

Chicago sewage plant uses alloy steels ... *524, correction 513, e514
Costs of fabrication discussed at A.I.S.C. meeting ... n482
Fatigue questions ... e195

STREET TRAFFIC

A.S.C.E. meeting discusses traffic control ... 529
Detroit traffic staff chosen by civil service ... n282
Parking:
Detroit plans underground parking lot ... n341
District of Columbia parking meters ... n221
Meter installations in more than 50 cities ... n292
Problem in various cities ... 340
Scranton and Wilkes-Barre approve of meters ... *84

STRUCTURAL DESIGN

Concrete bridge rigid frame test ... *615
Determining influence lines by balancing angle changes. L. E. Grinter ... *443
Handling corners in rigid frames. Lambert & Posey ... *147
Influence lines. R. W. Stewart ... l 547
Lateral resistance. Beanfield, Moorman ... l *165
Lateral resistance of buildings. A. Floris ... *59
Measuring stresses in models. Morris Berman ... *626
Photoelastic analysis broadened. Timby & Hedrick, Jr. ... *179
Theory and test ... e225

SUBWAYS

Boston subway extension approved ... n158
Chicago:
Commission to study plans ... n159
Subway bids opened ... n715
Subway cross sections ... n*602
Subway—D'Esposito represents PWA ... n602
Subway gets PWA grant ... *477, e484
Subway plans modified ... n389
Detroit vehicle subway to be put to ballot ... n480
London subway temperatures investigated ... 434
New York City—Independent subway contracts let ... n312
New York World's Fair transport plan. H. M. Brinckerhoff ... *381
Russian subway station ... n*317
Sullivan, J. G., railroad engineer, dies ... n160

SURVEYS AND SURVEYING

Air surveys need high speed planes (American Society of Photogrammetry) ... n316
Arm signals. M. D. Taylor, Jr. ... l 605
Boundary monument ... *743
Calculating deflection angles for highway curves ... 414
Computing concentric arcs. E. W. Barrett ... *246
Dimension marks. Otto Gottschalk ... *713
Drawing 14-inch circles. Daniel Griffith ... *246
Driving shield tunnels, mirror helps to discover pitch. B. C. Seal ... 120
Earthwork computation. Pearson, Barnes l 453; Kirk Miles ... l 693
Engineer license for surveyors urged ... Oct. 6 adv. n30
Field notes difficult for map drawing. Terrill Isbell ... l 133
Fitting a parabola to grade tangents. Donald Bregman, T. C. Coleman ... l *513
Fitting a parabola to grade tangents. L. D. Herb ... *215
Graphics for vertical curves. G. H. Dell ... *476
Insurance is offered against survey errors ... Dec. 22 adv. n14
New York-Connecticut boundary history ... *432
Parabola calculations. J. J. Cromwell ... Dec. 29 adv. l 18
Parabolic highway curves. T. C. Coleman ... l 721
Plotting points for curves in highways. T. C. Coleman, Jr. ... *627
Pruning shears for clearing line. J. S. Dodds ... 278
Pruning shears for clearing line. Gisborne, Smith ... l Oct. 20 adv. 21
Sign language. R. F. Merick ... l 483
Sign language numerals. M. A. Karp ... 279
Solving for X and Y. W. C. Goodwin ... *743
Spiraling highway curves ... 293
Table of right-of-way acreage ... 278
True areas on a Monroe calculator. B. C. Seal ... *245
Swimming pools:
Bottom sealed with marsh hay. S. G. Thompson ... 742
Illinois health board gives certificates of classification ... *78

T

TANKS AND STANDPIPES

Bristol, Conn. houses water treatment plant in circular steel tank ... *295
Failure of spheriodal gasoline tank believed due to weld ... n*569
Little Rock water tank collapses ... Oct. 6 adv. n32
Oakland, Md. builds tank reservoir for waterworks. D. E. Davis ... *301
Spheroidal oil tank explodes in test ... n398
Spiral-guided gasholder ... *226
D. S. Carder ... *767
Vibrations in concrete water tanks.
Water tank explosion in Minnesota ... n806

TAXATION

Contractor must pay state sales tax ... n160
Harmful taxing system ... e607
Missouri wants sales tax on municipal water ... n4
Washington surety completing project held not taxable ... n4

TENNESSEE VALLEY AUTHORITY

Arthur Morgan asks court to reinstate him ... n35
Court and committee study TVA ... n604
Finances probed at private expense ... n160
Investigation ... n65
Investigation continues ... n100, e102
Investigation:
Lilienthal gives details of sabotage charges ... n129
Krug defends TVA charges ... n746
Pauls named to head construction ... n5
Power yardstick condemned at hearings ... n690
Study of costs and rates represented at hearing ... n716
Tennessee Public Service sold ... n127
Tupelo reduces rates ... n747
Texas Water Resources Association organized ... Oct. 20 adv. n24
Thermometers, relay for temperature-control. M. E. Prior ... *414
Towers:
San Francisco Fair's octagonal tower design. J. J. Gould ... *813
Water towers in the Netherlands. F. A. Liefrinck ... *709

TRANSPORTATION

Chicago Transit Commission headed by Harrington ... n*570
New York City transit difficulties ... e455
New York World's Fair transport plan allows for fifty million visitors. H. M. Brinckerhoff ... *381
President's committee proposes centralized control of transport ... n803, e811
San Francisco-Golden Gate Fair transportation ... *472
Symposium on transportation at A.S.C.E. meeting ... 153
U. S. Chamber of Commerce draws up program ... Dec. 8 adv. n14

TUNNELS

California highway tunnel lining (unit prices) ... Oct. 27 adv. 18
Colorado River Aqueduct:
Construction program and management. J. L. Burkholder ... *659
San Jacinto tunnel driving. B. C. Leadbetter ... *669
San Jacinto tunnel east section holed through ... n*125
San Jacinto tunnel holed through ... n*253, n*629
Delaware Aqueduct tunnel:
Dravo Corp. is low bidder ... n717
Detroit not to vote on proposed tunnel ... n541
Flashlight explosions ... e166
Gunpowder Fall-Montebello explosion found to be an accident ... n161
Gunpowder Falls-Montebello water tunnel disaster ... n95, e102
Holland Tunnel service charge ... e454
Look to your borings ... e11
Memphis sewer tunnel accident kills worker ... n70
Mobile, Ala.:
Vehicle tunnel gets grant ... n806
New York City:
Battery-Brooklyn tunnel turned down in favor of parkway ... n418, e422
Battery tunnel application revised ... n342
Lincoln:
Deficit in funds ... n805
New Jersey approach ... *623
Queens Midtown:
Face regained after fire ... n191
Fire is still a mystery ... n67
Unwatering heading after fire ... 229, e224

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

Oakland, Calif.:
Broadway low-level tunnel suit decided against contractor..... n4
Broadway tunnel damages awarded to Joint High District.....n221
Shasta Dam bypass tunnel.....n*282
Staten Island, N. Y. sewer tunnels driven by small shields.....*149
Wheeling & Lake Erie R.R. tunnel cave-in n251
Wind tunnel at M.I.T. dedicated.....n315
Typhoid:
1937 deaths low.....n222

U

U. S. Chamber of Commerce:
Calls conference on construction.....n452
Conference on construction.....n512
U. S. Housing Authority see Housing

W

Wall, Edward E., celebrates 40 years in St. Louis n*285
Walls:
How to build leaky brick walls with good materials. A. B. MacMillan... 707

WASTES, INDUSTRIAL

Greensboro, N. C. completes waste treatment plant *321, e318
Mellon Institute to study steel mill pollution n3
Notes on sewage disposal. Willem Rudolfs 34, 158, 280, 446, 568, 714
Wisconsin notes improvements in treatment of industrial wastes..... 291
Water conduits:
California water conduit (unit prices).. Nov. 17 adv. 20
St. Louis conduits (unit prices)..... July 28 adv. 12

WATER MAINS

Finding leaks in water mains.....*431
Listening rod located leaks. G. A. Posner *93
Los Angeles eases strain off corporation cocks in mains by setscrews.....*296
Minnesota watermains (unit prices)... Sept. 22 adv. 32b
Napa, Calif. water main (unit prices).. Oct. 13 adv. 26
Sterilization of water mains. R. L. Corr .....l 605
Toledo's supply conduit strengthened by iron inner tube. R. L. Price....*495, e485

WATER METERS

Indianapolis water meters. W. W. DeBerard *593
Los Angeles system installs insulated water meter connection.....*109
Louisville meter practice..... 324
Madison, Wis. municipal water system is reliable. W W. DeBerard.....*169
Meter testing and repair bench..... *32

WATER POLLUTION

Big Sioux River survey recommends plans for pollution abatement..... 268
Delaware River pollution correction signed by four states..... n39
Hudson River pollution study. C. J. Velz *181, e166
Milwaukee controversy over gastro-enteritis epidemic to be settled by U. S. Health Service n69
Milwaukee water blamed for gastro-enteritis epidemic n247
Milwaukee water supply to be studied by Health Service.....n127
Milwaukee's water supply blamed for gastro-enteritis n604
Niagara Falls, Buffalo, Cleveland and Detroit new sewage plants will clean up the Great Lakes. E. J. Cleary.. *197, e194
Passaic Valley Sewerage Commission denies request that New York City Bay be put in class A.....n284
Potomac Valley pollution.....n572
Reservoir pollution law attacked in Connecticut n127
Shawnee, Okla. asks damages for pollution n127
Water rights:
Rio Grande River water a potential cause of trouble between Texas and Mexico. W. W. DeBerard.....*555, e548

WATER SUPPLY

Boston to have new aqueduct for Quabbin water n342
Cross connection tests (N.E.W.W.A.).. 411
Fire fighting needs (N.E.W.W.A)..... 411
Geological survey reports water level conditions 434
Government makes studies of water needs and measures rivers. J. C. Hoyt 269
Hetch Hetchy controversy halts PWA grants to San Francisco..... n1
Houston, Tex. water board recommends well system extension.....Nov. 3 adv. n28
Los Angeles:
Colorado River aqueduct's distribution system. R. B. Diemer.....*680
Power Board to ask competitive bids.. Dec. 15 adv. n22
Urgently needs the Colorado River water. F. E. Weymouth.....*639
Water Board asked to call for bids rather than use day labor.....n545
Milwaukee authorized to cover reservoir .....Dec. 1 adv. n27
Milwaukee reservoir to have cover....n541
Missouri wants sales tax on municipal water n4
New York City water supply leaks to be checked .....Dec. 15 adv. n24
Ogden, Utah, distribution system (unit prices) 744
Philadelphia Authority to take over water and sewage system.....n774
Rio Grande River water a potential cause of trouble between Texas and Mexico. W. W. DeBerard.....*555, e548
San Francisco-Golden Gate Fair water supply *470
Texas underground water bill planned..n281
Water service truck..... *32
Westchester County, N. Y. plans water supply n686
Westchester water plan opposed in watershed n775
Water supply see also Aqueducts

WATER TREATMENT

Bristol, Conn. houses water treatment plant in circular steel tank.....*295
Chicago breakwater bids called for on filter plant n314
Chicago filter grant details.....n187
Chicago filter plant to be started..n99, e102
Colorado River water softening consultants' names n574
Illinois health board gives certificates of classification to swimming pools.. *78
Imperial Dam and desilting works *736
Indianapolis Water Co. provides efficiency in water service. W. W. DeBerard *302
Irvin Works, Clairton, Pa. water supply pumped from the river.....*783
Kansas City, Mo. water plant operation 300
Los Angeles scatters reservoirs with chemicals *300
Minneapolis water softening plant to employ double cone precipitators..... *49
New York City regulates water conditioning n774
St. Paul, Minn. filter plant may be converted into water softening plant.... 708
Superintendent of a water plant outlines further design improvements.... 29

WATER WORKS

Advanced training offered water plant operators .....Dec. 15 adv. n22
Costs of water system (N.E.W.W.A.).. 409
Indianapolis Water Co. provides efficiency in water service. W. W. DeBerard *302, e286
Madison, Wis. municipal water system is reliable. W. W. DeBerard.....*169
Manual of water works accounting prepared 28
Mexico to guarantee waterworks loans n6
New Netherlands' water towers. F. A. Liefrinck *708
St. Louis engineers' strike ends.....n773
St. Louis water plant workers strike...n750
Tucson, Ariz., waterworks improvements (unit prices) 416
Weir, W. H., Secretary of A.W.W.A., honored n*188

WELDING

Butt welds defended. Tuckerman, Smith 19
Inspection is important.....e225
Licensing welders in New York City..*326
Lincoln Arc Welding contest winners..n315
New York City finds structural welding advances under the code.....*325
Sawtooth roof, welded framing for English factory *77

WELLS

Cattle grazing increased by development of shallow groundwater supplies. G. C. Waring.....*757
Cost of groundwater supplies (N.E.W.-W.A.) 410
Minnesota lake levels restored by wells 821
Minnesota well drilling (unit prices).. Nov. 24 adv. 20
Treasure Island, Calif., drained of salt water and leached with fresh. C. H. Lee 462
Wisconsin regulates well drilling..... 726
Western Association of State Highway Officials Reno, Nev. meeting.....n189, 240

WHARVES AND DOCKS

Fastening fenders to the front of sheet piling. J. E. Faigle.....*627
Key West naval-station wharf repaired with sheet piling. J. E. Faigle.....*560
Milwaukee sheet pile dock wall (unit prices) 538
Ship impact correction..... 41

WINDSTORMS

Charleston, S. C., damaged by tornadoes n*417
Charleston engineer condemns buildings after tornadoes n447
Hurricane and flood devastates New England n*386, e393
Hurricane and flood in the Northeast. H. W. Richardson.....*424, e422
New York State surveys storm damage n510
Wood:
Cambridge conference discusses timber and concrete strength..... 115

WORKS PROGRESS ADMINISTRATION

Disbursements faster than PWA.....n249
Employment by WPA is declining.....n686
Employment reaches new high.....n282
F. C. Harrington named administrator..n806
New York City's program of projects proposed n804
Shanties for New York WPA built in shop 119
Texas contract jobs planned.....n632, e634
Texas WPA contracts. C. H. Newell..l 751
World's Fair, see Expositions

Z

Zoning see Planning

* Illustrated; a, abstracts; e, editorials; l, letter; n, news

• AUTHOR INDEX •

Abbett, Robert W. Old and new building methods *24
Adbun-Nur, Edward A. Wrench for soils laboratory *156
Addicott, L. J. Arch radius..1 Oct. 20 adv. 21
Allen, W. D. M. Bath for automobiles..*626
Amador, Frank J., Jr. Slide rule for yardages *742
Andrews, W. Earle. New York World's Fair 1939 ..... *350
Ashdown, C. H. Sewer trenches sheeted with plywood panels..... *91
Atwater, Eugene. Regional flood control.1 483

Bachy, P. Algerian dams.....1 164
Barnes, Fred A. Earthwork computation 1 453
Barrett, Ernest W. Computing concentric arcs *246
Bartlett, Charles Terrell. Corpus Christi builds a covered reservoir..... *727
Beanfield, R. McC. Lateral resistance...1 165
Becker, Donald N., E. G. Benson & W. R. Wickerham. Lift bridge mechanisms and controls..... *618
Belque, Paul A. Law for engineers.....1 693
Benson, Earle G., D. N. Becker & W. R. Wickerham. Lift bridge mechanisms and controls..... *618
Bergman, Victor R. Old tunnel vaults revealed by excavation for building..*267
Berkenblit, S. E. Thirteen armory buildings *706
Berman, Morris. Measuring stresses in models *626
Bollen, R. E. Measuring volatile bitumen *107
Bondy, O. Brittle steel a feature of Belgian bridge failure..... *204
Bowman, Waldo G. Floods in the river valleys *427
Branch, L. V. Aqueduct operating program *677
Bregman, Donald. Fitting a parabola to grade tangents 1 *513
Brinckerhoff, Henry M. Transport for fifty million visitors..... *381
Brinker, Russell C. Fastening accoustical blocks *157
Burkholder, J. L. Construction program and management *659
Burmister, Donald M. Cohesionless soils.. 1 9
Burt, John B. With rod and gun?.....1 223
Busch, Henry Paul. Land fill: pro and con .....Oct. 13 adv. 33
Buzzell, D. A. Precast concrete riprap for Kingsley Dam..... *54

Carder, Dean S. Vibrations in concrete water tanks *767
Carey, William F. Land fills: pro and con 1 317
Carlton, Wm. W. Long-span timber arch centering *112
Cassell, Elwood L. Aren't we all.....1 223
Catton, Miles D. & F. T. Sheets. How to process soil-cement roads..... *20
Chase, E. Sherman. Sewage disposal in sandy soil *769
Chen, Fu-Hua. Strictly handmade..... *817
Clarke, Gilmore D. Landscape plan for the Fair *367
Cleary, Alfred J. Land fill: pro and con.1 391
Cleary, E. J. Cleaning up the Great Lakes *197
Land fills for refuse disposal..... *270
Selling public works to the public..... *794
What's right with Cityville..... *395
Clemens, George R. Cutoffs lower flood crests *608
Cohen, A. Burton. Centering hung from pier umbrellas *145
Circular sheet steel piers support detour trestle *399
Coleman, Thomas C. Fitting a parabola to grade tangents.....1 *513
Parabolic highway curves.....1 *721
Coleman, Thomas C., Jr. Plotting points for curves *627
Collier, A. R. Righting a tipped culvert..*533
Collier, E. A. Wire screens for scaling cliffs *536
Commons, G. G. For squaring numbers.. 156
Conard, William R. Inspection often neglected 1 347
Connell, E. J. Measuring live-wire height *92
Cook, Rudolph. Quick setting grount...1 575
Corr, Ralph L. Water main sterilization.1 605
Coverty, G. S., Jr. Screed for placing measured windrows *33
Cowan, Walter E. Chart gives soil weights *215
Cromwell, Josias J. Parabola calculations .....Dec. 29 adv. 1 18
Crookes, Thomas B. Land fill: pro and con .....Oct. 13 adv. 35
Cullings, E. S. Not service agencies.....1 809

Dale, F. A. Subzero concrete pumping..*407
Davis, D. E. Low cost water storage ..*301
Day, W. P. Exposition celebrates bridge achievements *457
DeBerard, W. W. Efficiency in water service *302
Growth problems in Corpus Christi..... *142
Reliable water service..... *169
Squatter warfare for water..... *555
Water meters in Indianapolis..... *593
Dell, George H. Graphics for vertical curves *476
DeWitt, Guy C. Resurfacing streets for service *401
Di Stasio, J. Fast work on reinforced concrete apartments *759
Diemer, R. B. Wholesale distribution to member cities *680
Dodds, J. S. Pruning shears for clearing line 278
Duncan, Frank K. Land fill: pro and con .....1 Oct. 20 adv. 22
Durham, Henry Welles. Roads for Fair and park *378

Eddy, Harrison P., Jr. Cautions regarding land-fill disposal..... 766
Eldridge, Herbert. Marking test piles..1 164
Erickson, D. L. Land fill: pro and con .....1 Sept. 22 adv. 43
Evans, Aaron. Spirals on highway curves.1 605

Faigle, John E. Neat repair job..... *560
Timesaving templet *627
Fair, Gordon M. Land fill: pro and con 1 347
Fair, Gordon M. & E. W. Moore. Tools for sanitary research..... *297
Fisher, Harry L. Land fills: pro and con 1 317
Fisher, John S. Land fill: pro and con .....1 Sept. 22 adv. 42
Floris, A. Lateral resistance of buildings *59
Foster, H. Alden & G. W. Glick. Foundations on deep fill..... *361

Galloway, Claran F. Why concrete pavements curl *800
Gamble, V. K. Monolithic brick pavement revival *704
Garnett, B. J. Expansion joints.....1 693
Garrabrant, R. B. New flood-control act extends federal authority..... 30
Garver, N. B. Exceptional wood pile record *713
Gaskins, John W. New legislation aids contractors on former federal work.. 56
Gaylord, J. M. Large pumps of unprecedented efficiency *673
Genter, A. L. Greensboro sewage plant..1 547
Geyer, G. Edmund. Professional activities 1 223
Gisborne, H. T. Clearing line on surveys .....Oct. 20 adv. 1 21
Glick, George W. & H. A. Foster. Foundations on deep fill..... *361
Goldman, O. G. Bituminous enamel bond strength *339
Goodrich, E. P. Early soil surveys..... 1 Oct. 20 adv. 21
Goodwin, W. C. Bending knee reinforcing *245
Solving for X and Y..... *743
Gottschalk, Otto. Simpler dimension marks *713
Gould, John J. Design of a 400 ft. octagonal tower *813
New timber framing joint..... *151
Green, Sterling S. Simple sand moisture test *414
Griffith, Daniel. To draw 14-in. circles..*246
Griffiths, D. Laying out cheek cuts on cripple rafters *279
Grinter, L. E. Determining influence lines by balancing angle changes..... *443
Grover, LaMotte. Underpass built in a flood plain *738
Gumensky, D. B. Governing factors in aqueduct design *653

Hadley, Homer M. Bridge expansion bearings 1 575
Hammond, Henry D. Model of test borings *476
Hanrahan, F. J. Plywood gusset plates..1 133
Hansen, Paul. Land fill: pro and con.. Oct. 13 adv. 34
Harris, Allyn. Gas cartridges aid dam excavation 1 808
Hedrick, Ira G., Jr., & E. L. Timby. Photoelastic analysis broadened..... *179
Herb, Lawrence D. Fitting a parabola to grade tangents *215
Herrold, George H. National Conference on Planning 85
Hill, C. S. Earth roads in the South pt. 1 *259, pt. 2 *306, pt. 3 *332, pt. 4 *403, pt. 5 *435, pt. 6..... *491
Hinds, Julian. Major problems of aqueduct location *646
Hogan, John P Construction organization and technique..... *359
Hoge, Lt. Col. W. M. Big Muddy gets first cutoff *755
Horn, E. H. Plywood makes a building..*551
Hoyt, John C. High water markers.....1 547
River measurement and water studies.1 269
Haing, P. S. & C. J. Posey. Hydraulic jump in trapezoidal channels *797
Hubert, Cyril Provo. Soundproof studios for the movies..... *211
Huffman, George R. Standard product..1 41
Humphrey, K. B. Hint for pump priming *537
Two pumps for high pressure..... 566
Hussey, H. D. & E. E. McKeen. Building the "Needle" and the "Apple"..... *586

Isbell, Terrill. More or less?.....1 133
Ivie, W. B. Long continued vibration reduces concrete strength.....1 255

Johnson, Gunnar. New top pressed on concrete road *531
Jones, Jonathan. Inspection often neglected 1 347

Kadle, Carl H. Equipment for processing fill material..... *487
Kadle, Carl H., Jr. Tailored sheepsfoot rollers *786
Kane, Wallace B. Cheap little cofferdam *94
Karp, Milton A. Sign language numerals 279
Keener, Kenneth B. Low dam at Marshall Ford *697
Kennedy, R. Evan. Velocity head correction 1 71
Kilcarr, Gilbert M. Aerial tramways.... 1 41
Kindsvater, C. E. & E. W. Lane. Hydraulic pump in enclosed conduits..... *815
King, George A. & G. R. Shields. Changed condition under contracts..... 561
Kirk, Chas. L. Everyday concrete..... 1 223
Low heat cement.....1 751
Trouble with brickwork..... 1 71
Kirkley, Lyndon F. Balanced cantilever erection of twin tied arches..... *236
Kranz, H. H. Scenic city entrance road..*439
Krattly, Homer W. Typing on tracing cloth 712

Lambert, B. J. & C. J. Posey. Handling corners in rigid frames..... *147
Lane, E. W. & C. E. Kindsvater. Hydraulic jump in enclosed conduits..... *815
Lavis, F. "Design for speed"..... 1 71
Leach, H. J. Storage for the Rio Grande.1 779
Leadbetter, B. C. Driving an extremely difficult tunnel *669
Lee, Charles H. Draining and leaching Treasure Island 462
Legault, Adrian R. Seal coats as road roofs *57
Legget, Robert F. Fort Peck slide....1 605
Letendre, A. T. Arch radius.....1*808
Lidicker, William Z. Soil load on buried plates *82
Liefrinck, F. A. Water towers in the Netherlands *709
Linthacum, Wayne W. Three duty test drill rig *712
Lustig, Joseph. Calking sewer joints to cut leaks *553

Macatee, W. R. A native testifies.....1 317
MacLeod, R. R Controlled maintenance costs *117
MacMillan, A. B. Closing sluiceways under head *19
How to build leaky brick walls with good materials 707
Martin, George E. Highway costs.....1 779
Martin, P. T. How to paint road signs cheaply *88
Maun, Vere P. Continuous bridges approved *186
McCarthy, Lewis M. Land fill: pro and con.....Oct. 13 adv. 32
McDonald, J. E. Sewers in quicksand....1 605
McKeen, E. E. & H. D. Hussey. Building the "Needle" and the "Apple"..... *586
Mehren, Edward J. British building sets an example *274
Meissner, H. S. & W. T. Moran. Field for low heat cement..... 589
Mensch, L. J. Everyday concrete.....1 133
Miles, Kirk. Earthwork computations....1 693
Millard, M. K. Decanting muddy lake water 310
Minear, V. L. Quick-setting cement..... Dec. 29 adv. 1 18
Mirick, R. F. Everyday concrete.....1 133
Gravel-packed quicksand 215
Sewers in quicksand.....1 779
Sign language 1 483
Moore, Edward W. & G. M. Fair. Tools for sanitary research..... *297
Moore, J. J. Engineering graduates.....1 164
Moorman, Robert B. B. Lateral resistance 1*165
Moran, W. T. & H. S. Meissner. Field for low-heat cement 589
Morgan, H. H. Everyday concrete.....1 164
Morrill, Arthur B. Arbiter or advocate?.1 751
Moses, Robert. Land fills: pro and con.. 1 317, e313
Myers, Earl C. Curve spirals..... 1 41

Newell, Chas. H. Texas WPA contracts..1 751

Park, John C. Curve superelevation maintenance 566
Pearson, Edwin A. Earthwork computation 1*453
Perkins, N. S. Plywood developments....1 808

• Illustrated; a, abstracts; e, editorials; l, letter; n, news

Perry, Bernard F. Adjustable bridge curb form *712
Posey, C. J. & P. S. Hsing. Hydraulic jump in trapezoidal channels....*797
Posey, C. J. & B. J. Lambert. Handling corners in rigid frames....*147
Posner, Geo. A. Listening rod locates leaks *93
Price, Robert L. Iron inner tube strengthens conduit *495
Prior, M. E. Relay for tmeperature control thermometers *414
Proctor, Carlton S. Preparation of the Fair site *352

Rich, Edward D. Land fill: pro and con.. 1 Sept. 22 adv. 42
Richards, Arthur. Land fill: pro and con. 347
Richardson, H. W. Water and wind on the shore *424
Ricketts, E. G. Safeguarding bridges by inspection *51
Roberts, L. B. Water, sewers and services *275
Rodio, Giovanni. Chemical consolidation. l 721
Roskili, O. W. Housing in Great Britain. *582
Rudolfs, William. Notes on sewage disposal....34, 158, 280, 446, 568
Russell, Edward T. Land fill: pro and con ....l 391

Sack, Louis J. Areas of parabolic segments *216
Sack, N. R. Novel detour....*536
Saller, Robert. Suspension bridge for water pipe *75
Sandberg, Helge. Snow removal in Norway *763
Sanders, E. L. Reduction of engineering plans cuts operating costs....*852
Sargent, Edward H. Multiple-use reservoirs ....l 575

Schofield, H. Z. Test of filler-to-brick bond *92
Schulze, John C. Design of timber splices. *216
Schureman, Leslie R. Bridge expansion bearings ....l 453
Seal, Benj. C. It's done with mirrors.... 120
True areas on a Monroe calculator....*245
Sears, H. H. Contractor loses damage suit 124
Seibert, E. C. Simple subsoil sampler....*121
Sell, William. Banding trussed bars....*414
Shapiro, Sidney M. Dictated by safety....*764
Sheddan, W. E. Land fill: pro and con..l 347
Sheets, Frank T. & M. D. Catton. How to process soil-cement roads.... *20
Sheridan, Arthur V. Planners discuss underground cities n316
Shields, George R. & G. A. King. Changed condition under contracts.... 561
Shreve, R. H. Design of exhibit buildings. *369
Skag, John. Flask cleaning made easy.. *32
Slack, Searcy B. Bridge curbs and rails. *498
Smedberg, C. W. Greensboro sewage plant ....l 547
Smith, Charles Albert. Clearing line on surveys....l Oct. 20 adv. 21
Smith, E. W. P. Butt welds defended... l 9
Smith, Nathan L. Notable dual road completed *45
Stewart, R. W. Influence lines....l 547
Sumner, L. G. Merritt Parkway bridges..l 165

Taylor, Mark D., Jr. Arm signals....l 605
Thompson, Paul W. Current waterway studies *822
Thompson, S. G. Marsh hay seals pool bottom 742
Timby, Elmer K. & I. G. Hedrick, Jr. Photoela-tic analysis broadened.... 179
Tschebotareff, Gregory P. Simple soil-test machine *581
Tuckerman, L. B. Butt welds defended.. l 9

Vaughan, E. W. Stabilizing earth fills with rock *27
Velz, C. J. Picture of pollution in the Hudson *181
Vincenz, Jean L. Land fills: pro and con. Sept. 15 adv. 22
Voorhees, S. F. Adapting plans to the site *357

Walsh, S. J. Wash control on cut slopes.. 92
Wang, A. B. Everyday concrete....l 255
Waring, Gerald C. Wells on the public range *757
Warne, W. E. Construction visitors....l 391
Waterman, L. T. Retaining wall design charts 336
Watt, David A. Defying nature....l 809
Webster, J. E. Flood gate design.... l 71
Weymouth, C. A. G. Designing workable concrete *818
Weymouth, F. E. Urgent need for Colorado River water....*639
Wherry, W. J. Engineering students....l 483
White, E. A. High concrete bridge for less cost *266
White, John C. Clean slate for Hastings..l 223
Wickerham, W. R., D. N. Becker & E. G. Benson. Lift bridge mechanisms and controls *618
Wiley, George. Chart for mix design.... 157
Williams, Harry A. Stresses in plywood..l 164
Williams, Herbert H. Engineering students ....l 721
Wolman, Abel. Land fill: pro and con... l Oct. 20 adv. 22
Wood, Richard H. Raising bridge spans. *246
Wuerpel, Chas. E. Laboratory concrete saw *120

Young, A. M. Crack control in concrete walls *178
Young, Truman P. Welded expansion joint *156

FOR THE INDEX TO ADVERTISERS IN THIS ISSUE SEE PAGE 144

* Illustrated; a, abstracts; e, editorials; l, letter; n, news